II. REMARKS

Claims 1-27 are pending in this application. Applicant does not acquiesce in the correctness of the rejections and reserves the right to present specific arguments regarding any rejected claims not specifically addressed. Further, Applicant reserves the right to pursue the full scope of the subject matter of the original claims in a subsequent patent application that claims priority to the instant application. Reconsideration in view of the following remarks is respectfully requested.

Entry of this Amendment is proper under 37 C.F.R. 1.116(b) because the Amendment: (a) places the application in condition for allowance as discussed below; (b) does not raise any new issues requiring further search and/or consideration; and (c) places the application in better form for appeal. Accordingly, Applicants respectfully request entry of this Amendment.

In the Office Action, claims 1-3, 10-15, 22-23, and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson et al. (US patent no 6,154,576), hereafter "Anderson," in view of Deering (US patent no. 6,489,956), hereafter "Deering." This rejection is respectfully traversed for the reasons stated below.

Initially, Applicants submit that the Office continues to cite its justifying references incorrectly. The Office cites Anderson as teaching:

> rotating a first image in an image buffer, the method comprising the steps of extracting first image data from the image buffer (col. 4, lines 1-18) and creating a rotated image that is substantially free of aliasing error using weighted sums of data points of the first image (col. 23, line 50 to col. 24, line 44)..."

Office Action page 5, paragraph 2. However, Anderson does not contain a col. 23 or col. 24 as cited by the Office, but Deering does. The Office also asserts that Deering teaches "...a module (col. 5, line 40 to col. 8, line 54; figs. 4-5 and 7b) for antialiasing of text overlays on electronic

images." Office Action page 5, paragraphs 1 and 2. However, the citation to Deering does not relate to what the Office is asserting. Accordingly, Applicants will assume that the Office is referring to Deering when the Office cites Anderson and that the Office is referring to Anderson when the Office cites Deering. Applicants will address the Office's rejections accordingly.

With regard to claims 1-3, 10-15, 22-23 and 26, the Office incorrectly argues that Deering teaches rotating a first image in an image buffer. The Deering invention converts data stored in a buffer for use by a display device where the display device contains fewer pixels than the buffer has data storage units. The Deering disclosure alludes to the possibility of image rotation several times (col. 12, line 15; col. 15, line 34; col. 32, line 35; col. 32, line 40; col. 33, line 13; col. 34, line 13, col. 35, line 34) but teaches only image convolution (filtering), zooming, and panning. Deering never specifically teaches rotation except to point out that its filtering system may be used in conjunction with a normal rotation algorithm. Col. 35, line 32-35. Furthermore, Deering teaches antialiasing of a rotated image only in the limited environment of a super sampled buffer. A super sampled buffer allows Deering to minimize aliasing errors by merging the values of many input pixels to calculate one output pixel value. Col. 16, line 10-29. Applicants' method can work in an environment where there is one input buffer pixel for every output buffer pixel. Applicants' invention does not require the environment of a super sampled buffer in order to remove aliasing errors.

The Office is also incorrect in its assertion that Deering teaches a skew angle. Deering teaches using multiple data points in a super sampled data buffer to calculate a single pixel on a display device. Deering uses a two-step process to accomplish its task: 1) it reads the sample data from the graphics processor into the super sampled data buffer (col. 18, line 19-22), and 2) it

filters the buffer data for display on the display device (col. 18, line 41-44). In sampling data from the graphics processor for storage into the super sampled data buffer, the Deering device may use a grid or may deviate from a normal grid in some manner. Col. 19, line 24 to col. 20, line 28. One method that Deering discloses for importing data into the buffer involves the method cited by the Office (col. 19, line 34 to col. 20, line 13) of offsetting from the normal grid "...by a random angle and random distance or by random x and y offsets, which may or may not be limited to a predetermined range." Col. 19, line 47-50. Applicants submit that the random angle cited by the Office is not the same as the skew angle included in the present invention. The random angle may be used as part of Deering's process to import data samples into the buffer. Col. 19, line 47-48. Deering does not use the random angle or any angle to modify the data currently in the buffer for display. Col. 18, line 48-61. The skew angle as contained in the present invention is used in a process to rotate the information that is currently in the image buffer. Furthermore, a skew angle such as used in the current invention is logically calculated to determine the degree to which the data in the image buffer is to be rotated. A skew is not a random offset from an x – y grid as disclosed in Deering. Because the random angle in Deering is not equivalent to the skew angle contained in the current invention, Applicants respectfully request that the Office withdraw its rejection.

The Office further erroneously asserts that Deering teaches weighting depending upon a skew angle. Deering teaches a system that generates a pixel on a display device by calculating a point in the super sampled image buffer that corresponds to the center of the pixel (center point), calculating the distance from the center point to the closest super sampled image buffer locations, determining the data values in the closest super sampled image buffer locations and filtering the

value of the pixel data using the data values and distances. Col. 18, line 48-61. Deering specifies that the data values may be filtered using a table lookup based on a filter extent (i.e., apparently a distance from a sample to center of output pixel); a table lookup based on filter extent (distance from center) squared; or a function of x and y. Col. 23, line 65 to col. 24, line 8. Deering uses these methods to calculate the distance or approximate distance from each of the samples to the output pixel center in order to give a weight to each sample based on this distance. Col. 24, line 29-30. The weighting factors used in Deering have no connection to the position, e.g., skew angle, of the initial image as contained in the present invention. Accordingly, Applicants respectfully request that the Office withdraw its rejection because Deering does not use a skew angle or the equivalent of a skew angle in its weighting process.

The Office's conclusion that the Deering device solves the same problem of removing artifacts in the same manner as the present invention does not take into account the entire scope of each invention. Deering removes artifacts by filtering data from a super sampled data buffer (col. 16, line 10-29) while the present invention has no need for such a super sampled buffer. Additionally, Deering acknowledges that rather than removing artifacts completely, it reduces them "...to appear more like noise, to which the eye is less sensitive..." (col. 26, line 1-2) and then may compensate by "...chang[ing] the artifacts from a fixed position on the display to varying positions on the display, which are more likely to be overlooked by the human visual system." Col. 26, line 43-46. In contrast to Deering's approach of pseudo-randomly minimizing and moving artifacts, the method in the present invention includes weighting based on a skew angle to logically remove artifacts.

Applicants assert that the Office's response to Applicants' arguments continues to misconstrue Deering. As stated above, Deering does not teach that weighting depends on a skew angle. Applicants recognize the Office's citation to Deering's method of generating output pixels by selecting and filtering samples in the super-sampled sample buffer. Col. 23, line 65 to col. 24, line 44. The Office continues to attempt to equate Deering's weighting of a pixel by calculating the distance from the center of a pixel to the present invention which includes rotating an image by a certain angle (i.e., a skew angle) using a weighting equation based on the skew angle. Nowhere in the Deering output pixel calculation cited by the Office is the mention of either a skew angle or anything equivalent to a skew angle. It is inconceivable that the Office continues to equate these two completely different functions without the presence of a skew angle in the Deering reference.

Applicants recognize the Office's citation to the Deering method of importing data into the data buffer using a perturbed grid (col. 19, line 43-56) as a mistaken attempt to equate the random angle in Deering to the skew angle included in the present invention. As stated above, the Office's attempt is flawed for several reasons. First, the random angle in Deering is used to import data from the graphics processor and put the data into the buffer. Col. 19, line 34-58. The Deering random angle is not used to modify the data once it is in the buffer. Col. 20, line 48-61. This random angle is not equivalent to the skew angle in the present device, which is used *inter alia* to rotate the data currently stored in the data buffer. Second, the angle in Deering is a random angle. A random angle does not depend on the condition of the surrounding data. It is simply picked "out of thin air." A skew angle as found in the present invention is logically calculated to be the angle of rotation of the image in the buffer. Applicants fail to see how the

Office can equate the random angle of Deering with the skew angle as found in the present invention.

Second, the Office misinterprets Deering by juxtaposing the function of *importing* data into the buffer with the function of *filtering* the data from the buffer for display, but the two functions are separate and distinct. The *importing* function may use a random angle (col. 19, line 47-48) but does not use weighting. Conversely, the *filtering* function may utilize weighting (col. 24, line 1) but does not use an angle. The Office cannot simply use these two unrelated functional elements to support its obviousness rejection.

In view of the foregoing, Applicants respectfully submit that the Office is misinterpreting Deering. In Deering, sample positioning schemes are predetermined and overlaid on an image, and have no relation to the initial image. The weighting factors in Deering are based on a sample's relation to the center of a desired output pixel, and NOT the position or skew angle of the initial image. Anderson fails to overcome these shortcomings. Accordingly, Applicants request withdrawal of the rejection.

With regard to the Office's other arguments regarding dependent claims, Applicants do not agree with the Office's assertions. However, for brevity, Applicants will forego addressing each of these rejections individually, but reserve their right to do so should it become necessary.

Applicants appreciate the indication that claims 4-9, 16-21, 24-25 and 27 would be allowable if rewritten in independent form. However, as discussed above, Applicants do not believe that is necessary.

Applicants respectfully submit that the application is in condition for allowance. Should the Examiner believe that anything further is necessary to place the application in better

condition for allowance, he is requested to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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